

## Shortleaf pine restoration and fire

When it comes to using prescribed fire to preserve and enhance a forested landscape, wooded tracts with shortleaf pine are at the top of the list for positive response to the drip torch.

Without regular exposure to fire, woods dominated by shortleaf pine can rapidly transition to hardwoods.

Shortleaf pines provide excellent habitat for many wildlife species. Wild turkeys especially enjoy the first-rate roosting sites and brooding areas. Yet, shortleaf pine habitat is increasingly dwindling, estimated at barely one-tenth of what it was hundreds of years ago (see “Reaching the Pine Plateau,” page 20).

Brian Zielinski, NWTf’s Eastern Region director of conservation operations, says, “One can look to a variety of causative factors that drove such decline. These include over-harvest; land use changes, such as conversion to croplands or livestock pastures; and preference for other pine species, such as loblolly, for timber products. Disease, pests and a lack of active forest management to help facilitate natural regeneration also contribute. Most would agree, though, that the most significant cause of the decline is lack of fire.”

### WHERE THERE’S SMOKE

Why prescribed fire has been missing from the shortleaf pine landscape mirrors scenarios in other areas of the country.

For one, explains Chris Coxen, NWTf’s district biologist for North Carolina and Tennessee, large-scale forest management is a challenge when ownership is highly fragmented. In shortleaf country, much of the government-owned land is intermixed with big tracts of private property. Managing smoke from a controlled burn is a major concern.

“Because of the patchwork nature of the public lands and adjacent human development, managers are highly aware of wind direction and the potential for negative human impacts, such as car accidents on smoke-filled roads, and public alarm or annoyance because of smoke,” Coxen says. “It can be a public relations disaster if an agency smokes out a town. All other conditions may be perfect, but burns will be canceled if there’s potential for this to happen.”

Last year’s catastrophic wildfire near Gatlinburg, Tennessee, helped raise awareness of the dangers that exist when forests aren’t burned, either naturally or by prescription. Fuel builds up with debris, dead and diseased trees and more. Unplanned fires can rapidly get out of control.

Coxen called the amount of Southern Appalachian wildfires last year “unprecedented.”

“Prescribed fire helps maintain healthy forests while mitigating the potential for catastrophic wildfire,” he said. Plus, prescribed

fire on the front-end is more preferred from an economic and human welfare standpoint, Coxen says.

Even with the challenges, prescribed fire successes are occurring in shortleaf pine country.

Coxen points to completion of a National Fish and Wildlife Foundation grant within the Cumberland Plateau on the Daniel Boone National Forest in Kentucky and the North Cumberland Wildlife Management Area in Tennessee. This 2014-16 project focused on applying prescribed fire to maintain and improve existing shortleaf pine and oak forest communities, as well as establish new shortleaf pine forests. The NWTf helped raise matching funds for this effort.

“Our USDA Forest Service partners implemented 18,609 acres of prescribed fire on the Daniel Boone National Forest and restored 49 acres of new shortleaf pine habitat,” Coxen said. “Our Tennessee Wildlife Resources Agency partners implemented 3,002 acres of prescribed fire on the North Cumberland WMA.”

Beyond work on public lands, NWTf is working with private landowners to help them better understand the benefits of shortleaf pine habitat. A key part of this outreach is helping landowners understand the various cost-share programs available through the USDA’s Natural Resources Conservation



Service. Coxen says NWTF field representatives can help landowners tap existing programs that help create management plans and offset costs of prescribed fire and other forest enhancements.

#### TEAMWORK AND PRIORITIZATION

Zielinski says prioritizing resources is essential to restore fire as a regular forest management tool in areas where shortleaf restoration is the goal. Budgets are down, affecting resources and capacity.

"Governmental agencies and partners are spread thin," Zielinski says. "In addition, there are only so many good burn days each year in which weather parameters fall within the desired prescription for controlled burning. Long term planning and associated prioritization is certainly key when restoring shortleaf through active forest management."

He notes that much emphasis in recent years focused on developing regional or state-based "burn teams." These teams, typically comprised of federal and state agency partners, along with nongovernmental organizations, bridge the capacity gap, making it easier and more effective to achieve "landscape level" approaches to prescribed fire.

Coxen hopes the prescribed fire message is widely understood.

"It is the most cost-effective management tool and is often used by state agencies in Kentucky and Tennessee and the Forest Service to help manage shortleaf pine forests on the Cumberland Plateau," Coxen said. "It has minimal risk to people and structures. Wildfires cost millions of dollars every year, and our current model to fund wildfire control isn't sustainable. It's better to put money and resources toward prescribed fire." — Ken Perrotte

## ASK DR. TOM



Some years ago, I was preseason scouting from a blind, trying to identify the quality of gobblers on the property using a spotting scope. A few times, I spotted a bearded hen with a pencil thin 9-inch beard and a spur on one leg, which was thin, a bit curved and about 1/2- to 5/8-inch long. She was always alone, and it seemed other hens would move out of her way when she came upon them. If they didn't, she would press her dominance over them fast. I never saw her with a gobbler, and we wondered if she ever had (poults). We decided not to hunt her, since she didn't



have two spurs, and hoped she was a breeder but never saw her with poults. What do you think about that very different hen?

Robert Bending, Spring Hill, Tennessee

From your description of her behavior, she sounds like a dominant bird. She likely was a few years old and was used to "ruling the roost." Bearded hens are not uncommon, though their beards are usually thinner and shorter than those on gobblers. While working on trap and transfer operations, I transferred wild turkeys to more than 40 release sites. Almost every release site received a bearded hen, simply because we captured quite a few of them. I checked our banding records for data on the incidence of beards and spurs on hens. Over a 30-year period, we captured 1,515 Eastern wild turkey hens. Of that number, 133, or just under 9 percent, had beards, and only five, or 0.3 percent, had both a beard and one or two spurs. That sample included both adult and juvenile hens. Most likely, some juvenile hen beards went undetected because they were too short to be visible. If you look only at adult hens, the percentage of bearded hens was just under 14 percent (903 adult hens, 126 bearded). Four of those bearded adult hens had one or two spurs, so about 0.4 percent had spurs. I think we can safely say that, in general, about 10 percent of hens sport beards and less than 1 percent have spurs. Most of the spurred hens had only one spur. There is no evidence to suggest that bearded hens or hens with spurs are infertile. In fact, I have caught bearded hens with poults in late summer and have seen broods accompanied by bearded hens. No one can say for sure whether bearded hens pass that trait on to their offspring. Biologists just don't get the opportunity to study wild turkey heredity that closely because there are few population management implications.

#### → HAVE A QUESTION FOR DR. TOM?

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